

Operating Instructions



Fieldbus Power Supply System

- > 9412/0.-3.0
Fieldbus Power Supply
- > 9419/08... bus-Carrier



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2 General Information

2.1 Manufacturer

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2.2 Information Regarding the Operating Instructions

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Publication Number: 2013-08-19-BA00-III-en-03
Hardware version: from Rev. B
Software version: from V01-02

We reserve the right to make technical changes without notice.

2.3 Symbols Used

	Action request: Describes actions to be carried out by the user.
	Reaction sign: Describes the results or the reactions to the actions taken.
	Bullet
	Commentary sign: describes notes and recommendations.
	Warning sign: Danger due to an explosive atmosphere!

3 General Safety Information

3.1 Safety Instructions for Assembly and Operating Personnel

The operating instructions contain basic safety instructions which are to be observed during installation, operation and maintenance. Non-observance will endanger persons, plant and the environment.

WARNING

Danger due to unauthorised work being performed on the device!

- ▷ Risk of injury and damage to equipment.
- ▶ Assembly, installation, commissioning, operation and maintenance must only be performed by personnel who are both authorised and suitably trained for this purpose.

Before assembly/commissioning:

- ▶ Read through the operating instructions.
- ▶ Give adequate training to the assembly and operating personnel.
- ▶ Ensure that the contents of the operating instructions are fully understood by the personnel in charge.
- ▶ The national installation and assembly regulations (e.g. IEC/EN 60079-14) apply.

When installing the devices:

- ✗ When using the device in Zone 2, the device must be built into an enclosure which corresponds at least to the requirements of the IEC/EN 60079-15.
- ✗ The connection components (e.g. cable entries and cable glands, switches, displays, etc.) of the enclosure must comply with the requirements of IEC/EN 60079-15.
- ✗ Make sure that the maximum allowed ambient temperatures for the enclosure are not exceeded (see chapter "Maximum Allowed Ambient Temperatures (Without Forced Ventilation)").

When operating the devices:

- ▶ Ensure the operating instructions are made available on location at all times.
- ▶ Observe safety instructions.
- ▶ Observe national safety and accident prevention regulations.
- ▶ Only run the device according to its performance data.
- ▶ Servicing/maintenance or repair work which are not described in the operating instructions must not be performed without prior agreement with the manufacturer.
- ▶ Any damage may compromise the explosion protection.
- ▶ No changes may be made to the devices or their components that compromise explosion protection.
- ▶ Install and use the device only if it is undamaged, dry and clean.

If you have questions:

- ▶ Contact the manufacturer.

3.2 Warnings

Warnings are sub-divided in these operating instructions according to the following scheme:

 WARNING
Type and source of the danger! ▷ Possible consequences. ▶ Measures to avoid danger.


They are always identified by the signalling word “WARNING” and sometimes also have a symbol which is specific to the danger involved.

3.3 Conformity to Standards

The component conforms to the following regulations and standards:

- ✗ Directive 94/9/EC
- ✗ Directive 2007/108/EC
- ✗ IEC/EN 60079-0
- ✗ IEC/EN 60079-11
- ✗ IEC/EN 60079-15
- ✗ IEC/EN 61158-2
- ✗ FF-831 Foundation Specification: Fieldbus Power Supply Test Specification

4 Designated Use

 WARNING
Only use the device for its intended purpose! ▷ Otherwise, the manufacturer’s liability and warranty expire. ▶ Only use the device under the operating conditions described in the operating instructions. ▶ The device must only be used in areas subject to explosion hazards according to these operating instructions.

The Fieldbus Power Supply is used for the supply of a FOUNDATION™ fieldbus H1 segment. It supplies the connected field devices and the host with energy.


Two Fieldbus Power Supplies each allow a segment to be supplied with power redundantly or with increased output current (boost operation).

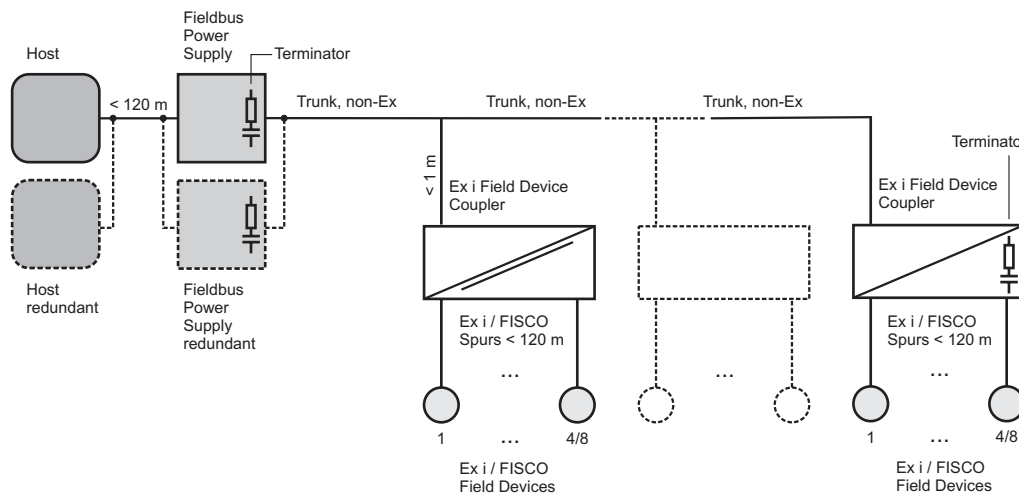
The Fieldbus Power Supply may be installed in hazardous areas of Zone 2 and in the safe area. When used in Zone 2, the device must be built into an enclosure which corresponds at least to the requirements of IEC/EN 60079-15.

When a suitable field device coupler (FDC) is used, the trunk may be introduced into Zone 2 and, when an Ex i fieldbus barrier or an Ex i field device coupler is used, also into Zone 1.

The Fieldbus Power Supplies 9412/0.-310 and 9412/0.-320 each have an activatable terminator for standard-compliant termination of a segment end.

4.1 Exemplary Assembly of a Segment


	$\text{Length}_{\text{segment}} = \text{Length}_{\text{trunk}} + \sum \text{Length}_{\text{spurs}} \leq 1900 \text{ m}$ <p>For information on calculating the allowed segment, trunk and spur lengths, please refer to IEC 61158-2 and FF AG-181, Rev 3.1.</p>
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The Fieldbus Power Supply is connected to the host via the main line. This can be followed by connecting suitable field device couplers via the trunk.

4.2 Operating Modes

	<p>Boost operation is only possible by means of the Fieldbus Power Supplies 9412/0.-310 und 9412/0.-320.</p>
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Simplex operation

In simplex operation, one Fieldbus Power Supply supplies one segment with energy. The power supply of the Fieldbus Power Supply may take place redundantly.

In case of overload or short-circuit of the Fieldbus Power Supply or of the trunk, an error message is output via a relay contact.

In overload mode, normal operation of the FPS continues up to about 540 mA. When the current output exceeds about 540 mA, the segment is switched off, in order to protect the connected field devices and the FPS.

From a current output of > about 540 mA, an error message is output via the integrated relay contact, and the segment is switched off.

Redundant operation

In redundant operation, two Fieldbus Power Supplies supply a segment in parallel with up to 500 mA. In case of a failure of one Fieldbus Power Supply, the other Fieldbus Power Supply automatically provides the full power supply, and an error message is output via a relay contact.

Boost operation

In boost operation, two neighbouring Fieldbus Power Supplies permanently supply a segment in parallel with the twice the current of up to 1 A. This also allows consumers that have a high current consumption to be connected to a fieldbus (e.g. Digital I/O Coupler (2-wire) 9413/28). Redundant supply of a segment, in order to increase availability, is not possible in boost operation.

4.3 Selection of the Fieldbus Power Supply

	9412/...-300			9412/...-310			9412/...-320		
	00	01	02	00	01	02	00	01	02
Operation with Ex ic/nL field devices (in combination with a suitable Zone 2 FDC)									
$U_o \leq 30.4 \text{ V}$ (for Ex ic/nL field devices at $U_i > 30.4 \text{ V}$)	x			x			x		
$U_o \leq 17.3 \text{ V}$ (for Ex ic/nL field devices at $U_i > 17.3 \text{ V}$)		x			x			x	
$U_o \leq 23.7 \text{ V}$ (for Ex ic/nL field devices at $U_i > 23.7 \text{ V}$)			x			x			x
Installation									
DIN rail / pac-Bus				x	x	x	x	x	x
bus-Carrier	x	x	x	x	x	x	x	x	x
Terminator can be switched				x	x	x	x	x	x
Diagnosis									
Overload/short-circuit message via relay contact	x	x	x	x	x	x	x	x	x
Fieldbus loss in quality message via relay contact							x	x	x
Display via LED									
PWR/ERR	x	x	x	x	x	x	x	x	x
Status Segment/Terminator				x	x	x	x	x	x
Diagnosis of signal quality: Evaluation via "BAD"/"WARN"/"OK" LED							x	x	x
Diagnosis digitally via PC				x	x	x	x	x	x
Diagnosis via external communication module (optional)	x	x	x	x	x	x	x	x	x

4.4 Connection of Ex i Field Devices


The output circuit is voltage-limited Ex ic according to IEC/EN 60079-11. Connecting a downstream current limiter of suitable design (e.g. R. STAHL Zone 2 Field Device Coupler of series 9411/34 or 9410/34) gives an intrinsically safe current of protection level Ex ic.

Alternatively, nL field devices according to IEC/EN 60079-15 may also be operated on this circuit. A label to that effect is required.

4.5 Diagnosis

The external power supply and the general device status will be monitored in all Fieldbus Power Supplies and displayed via LEDs or a relay contact.

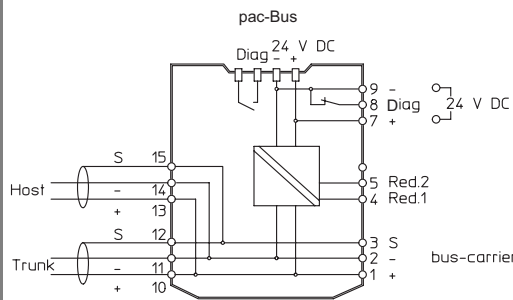
All Fieldbus Power Supplies measure the electrical parameters (Physical Layer) of the fieldbus, such as current/voltage levels, signal levels, noise, jitter and shielding short circuit. Depending on design, analysis by PC, integrated LED/relay or online via a separate diagnosis communication module will take place.

	For the connection options and diagnosis options, see chapter "4.3 Selection of the Fieldbus Power Supply", "7.3 LEDs and Error Message Contact at the Fieldbus Power Supply" and "11.2 Diagnosis via PC".
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5 Technical Data

Version	9412/0.-3.0									
Explosion protection										
Gas explosion protection										
ATEX	Ⓔ II 3G Ex nA nC IIC T4 Gc									
IECEX	Ex nA nC IIC T4 Gc									
Installation	Zone 2, safe area									
Certificates										
ATEX	BVS 09 ATEX E 099 X									
IECEX	IECEX BVS 09.0043X									
Power supply										
Nominal voltage	24 V DC									
Voltage range	18 ... 32 V									
Electrical Data										
	9412/00			9412/01			9412/02			
Supply voltage [V]	18	24	32	18	24	32	18	24	32	
Current consumption [mA]	970	730	550	560	425	325	760	570	435	
Power dissipation [W]	3.21	3.27	3.35	2.33	2.45	2.65	2.73	2.73	2.97	
all data at max. output current / output voltage										
Indication	LED green "PWR"									
Reverse polarity protection	yes									
Galvanic isolation										
Fieldbus to power supply	250 V AC eff.									
Fieldbus										
Specification	IEC 61158-2, FOUNDATION™ fieldbus H1 FF-831									
Terminator	integrated, switchable									
Segment supply										
Electrical Data										
	9412/00			9412/01			9412/02			
Output voltage [V DC]	≥ 28.5			≥ 15.5			≥ 21.9			
ic voltage limit U _o [V]	30.4			17.3			23.7			
(ic acc. to EN 60079-11:2007)										
Output current										
Simplex mode	10 ... 500 mA									
Redundant mode	10 ... 500 mA (= 2 x 250 mA in redundant mode 2 x 9412)									
Boost mode	10 mA ... 1 A (= 2 x 500 mA in parallel operation 2 x 9412)									
Overload	500 ... 540 mA									
Short-circuit current	≤ 0 mA (output switched off)									
Residual ripple	Corresponds to chapter 22.6.2 of IEC 61158-2									
Indication	LED yellow "SEG" (flashes in case of overload and short-circuit)									

Diagnoses	
Supply error	< 18 V
Fault detection	9412/0.-310-11s: Overload and short circuit
	9412/0.-320-11s: Overload, short circuit and Physical Layer values: trunk voltage/current, signal level, noise, jitter, unsymmetries
Segment error	Overload: > 500 mA (output active) Short circuit: > 540 mA (output switched off)
Error message	Relay contact (30 V DC / 100 mA)
Fault indication	9412/0.-310-11s: LED red "ERR" flashes
	9412/0.-320-11s: LED green "OK" for segment in set quality range
	LED yellow "WARN" for segment below set quality range LED rot "BAD" for segment outside specification
Interface	serial, front side (RS232)
Electromagnetic compatibility	Tested to the following standards and regulations: EN 61326 (IEC/EN 61000-4-1...6 and 11; EN 55022 class A); NAMUR NE21
Ambient conditions	
Ambient temperature	- 20 ... + 70 °C (observe operating instructions)
Storage temperature	- 40 ... + 80 °C
Relative humidity (no condensation)	< 95 %
MTBF (to SN 29500)	184 years (at 40 °C)
Connection diagram	

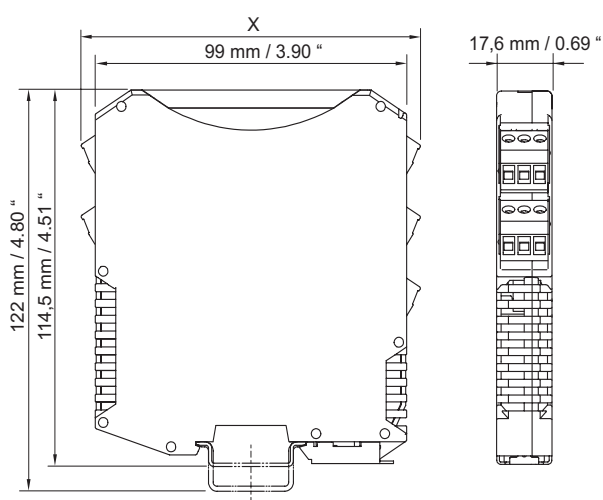


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Mechanical Data	
	Screw terminals
Connection single-wire	
- rigid	0.2 ... 2.5 mm ²
- flexible	0.2 ... 2.5 mm ²
- flexible with cable end sleeves (without / with plastic cover)	0.25 ... 2.5 mm ²
Connection two wires	
- rigid	0.2 ... 1 mm ²
- flexible	0.2 ... 1.5 mm ²
- flexible with cable end sleeves	0.25 ... 1 mm ²
Weight	approx 0.135 kg
Mounting type	on DIN rail acc. to EN 50022 (NS35/15; NS35/7.5) or on bus-Carrier
Installation position	Preferably vertical (see operating instructions)
Enclosure Ingress Protection	IP30
Terminal Ingress Protection	IP20
Enclosure material	PA 6.6
Fire protection class (UL 94)	V0

Version	9419/08...
Explosion protection	
Gas explosion protection	
ATEX	II 3 G Ex nAc nCc II T4
IECEX	Ex nAc nCc II T4
Installation	Zone 2, safe area
Certificates	
ATEX	BVS 09 ATEX E 100 X
IECEX	IECEX BVS 09.0042X
Power supply	
Voltage range	19 ... 32 V
Reverse polarity protection	yes
Indication	LED, green
Fault detection	
Line fault LF	Contact (35 V /100 mA) closed in good conditions Contact (35 V /100 mA) closed in good conditions
Ambient conditions	
Ambient temperature	- 20 ... + 70 °C (observe operating instructions)
Storage temperature	- 40 ... + 80 °C
Relative humidity (no condensation)	< 95 %
Mechanical Data	Screw terminals
Connection single-wire	
- rigid	0.2 mm ² ... 2.5 mm ²
- flexible	0.2 mm ² ... 2.5 mm ²
- flexible with cable end sleeves (without / with plastic cover)	0.25 mm ² ... 2.5 mm ²
Connection two wires	
- rigid	0.2 mm ² ... 1 mm ²
- flexible	0.2 mm ² ... 1.5 mm ²
- flexible with cable end sleeves	0.25 mm ² ... 1 mm ²

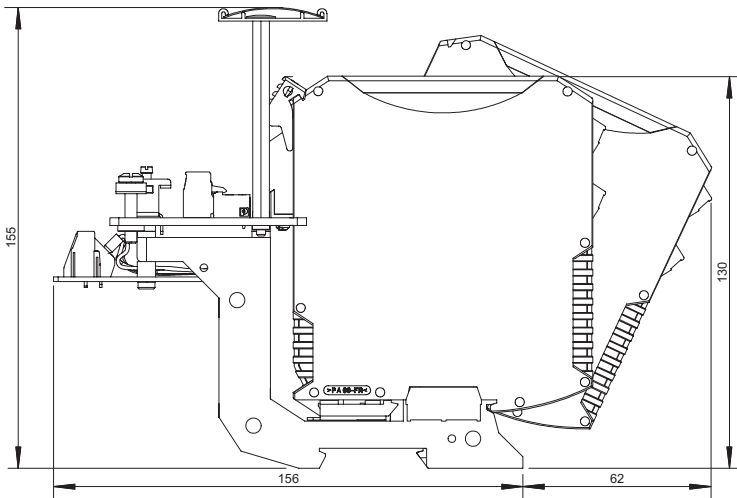
Dimensional Drawings (All Dimensions in mm) - Subject to Alterations



	Dimension X
Screw terminals	108 mm
Spring-cage terminals	128 mm

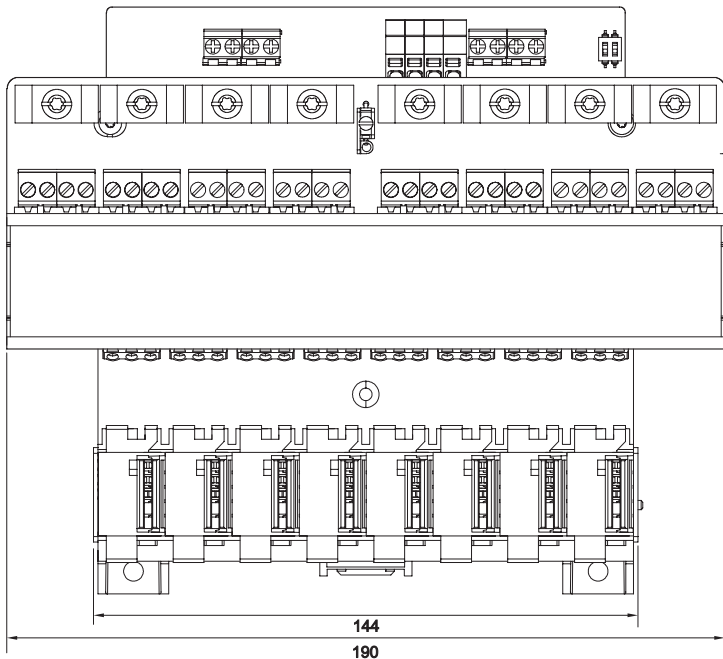
Fieldbus Power Supply 9412/00-3.0-11

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12621E00

Fieldbus Power Supply on bus-Carrier 9419/08.-XX0-..C1



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bus-Carrier 9419/08.-XX0-..C1

6 Maximum Permissible Ambient Temperatures (Without Forced Ventilation)

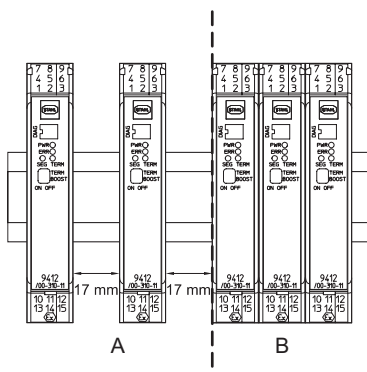
Depending on the installation position, there is a maximum ambient temperature T_a for the output current I_{out} of a Fieldbus Power Supply.

For the different installation versions, the maximum ambient temperature on the devices must be determined using the respective diagram.

The current I_{out} corresponds to the output current of a Fieldbus Power Supply:

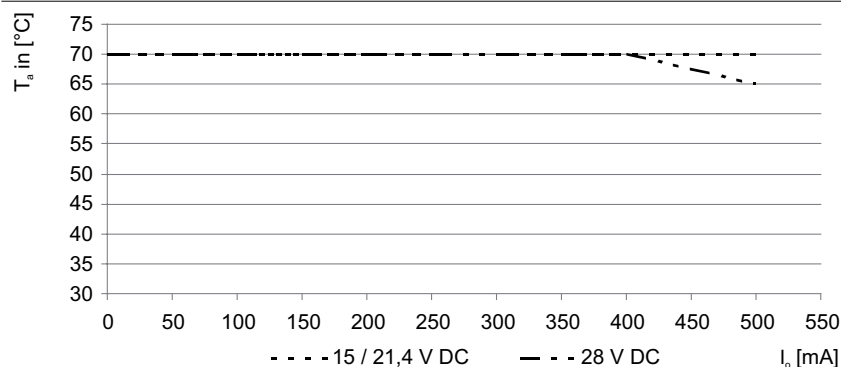
- ✗ In the single operation, a segment is supplied with energy by a Fieldbus Power Supply and therefore the segment current corresponds to the output current I_{out} of a Fieldbus Power Supply.
- ✗ In the redundant mode, a segment is supplied jointly with power by two Fieldbus Power Supplies, in which the load current of each module is halved. Accordingly, in order to determine the maximum permissible ambient temperature, only half the current demand of the segment must be used in the diagrams for I_{out} .

6.1 Maximum Permissible Ambient Temperature when Assembled on DIN Rail



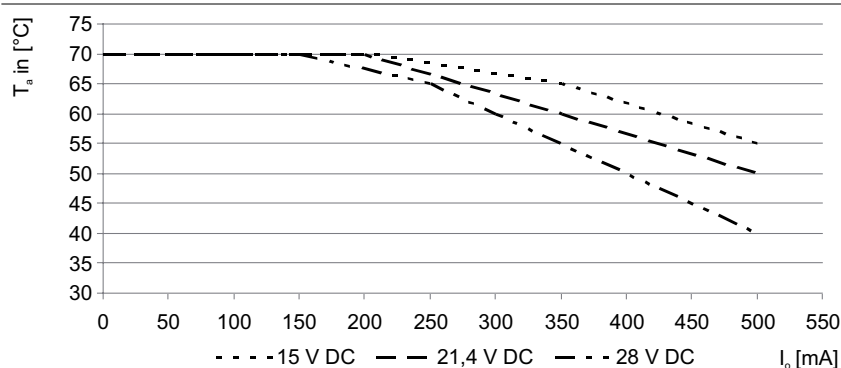
14127E00

A: Horizontal assembly, distance > 17 mm:

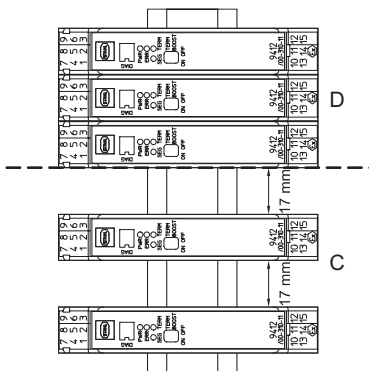


14128E00

B: Horizontal assembly, without distance:

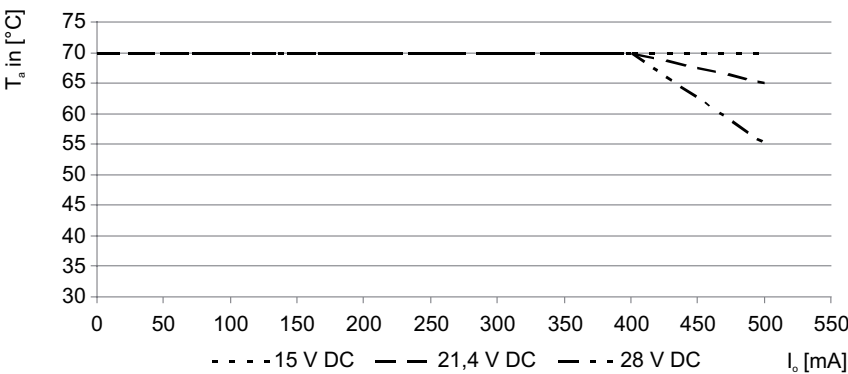


14128E00



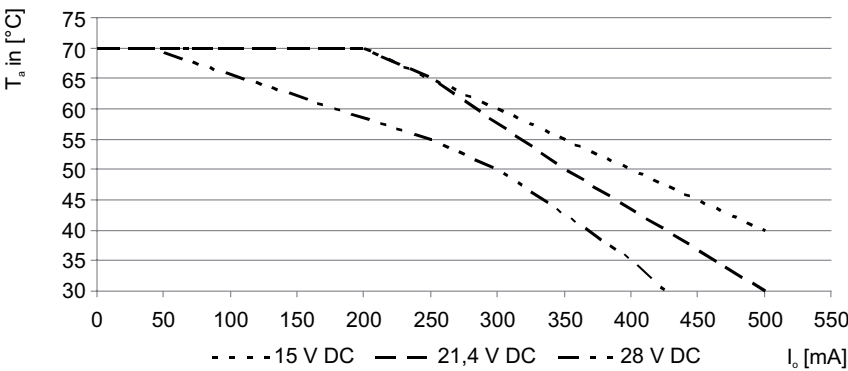
14130E00

C: Vertical assembly, distance > 17 mm:



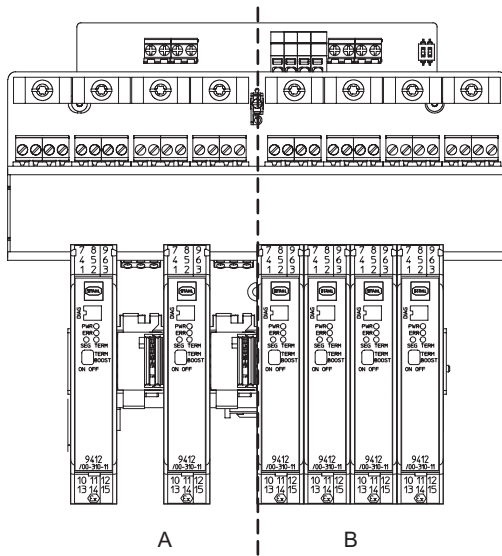
14131E00

D: Vertical assembly, without distance:



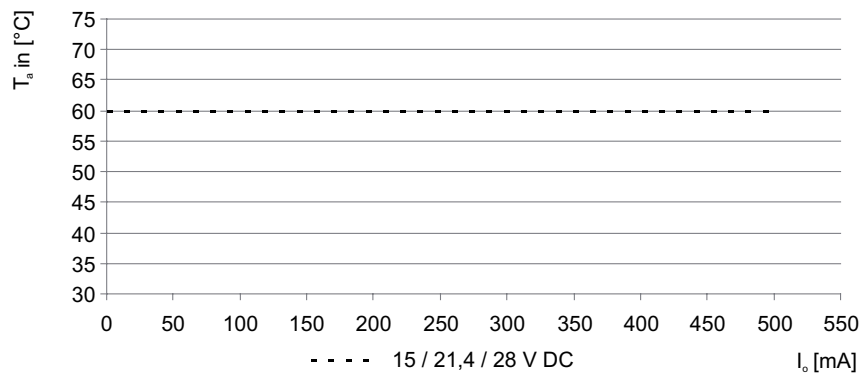
14132E00

6.2 Maximum Permissible Ambient Temperature when Assembled on bus-Carrier



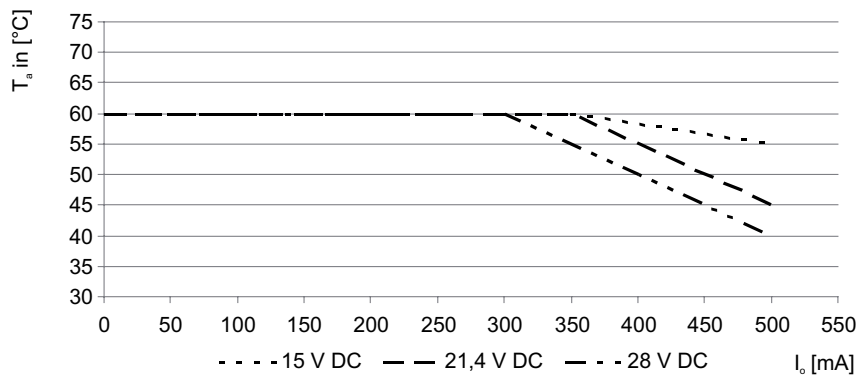
14133E00

A: Horizontal assembly, distance > 17 mm:

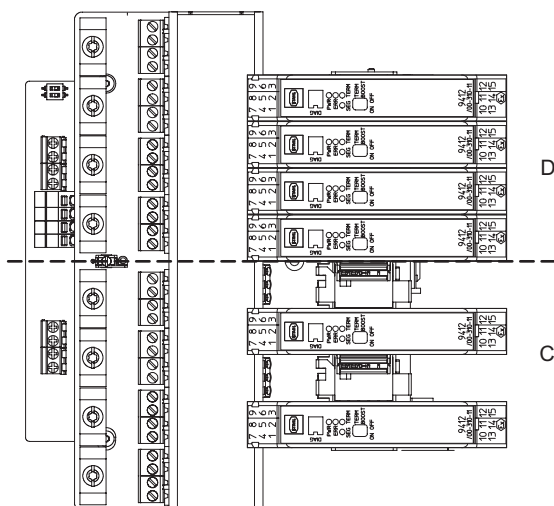


14134E00

B: Horizontal assembly, without distance:

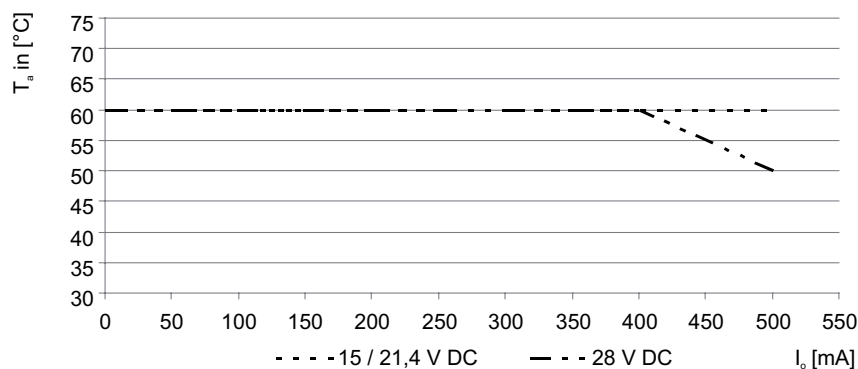


14135E00



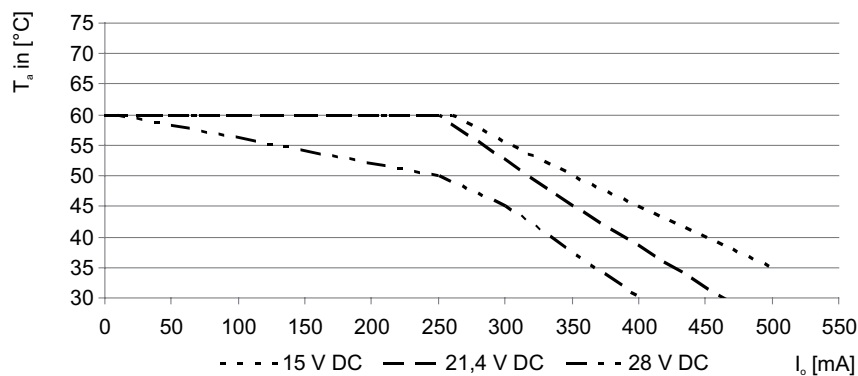
14136E00

C: Vertical assembly, distance > 17 mm:



14137E00

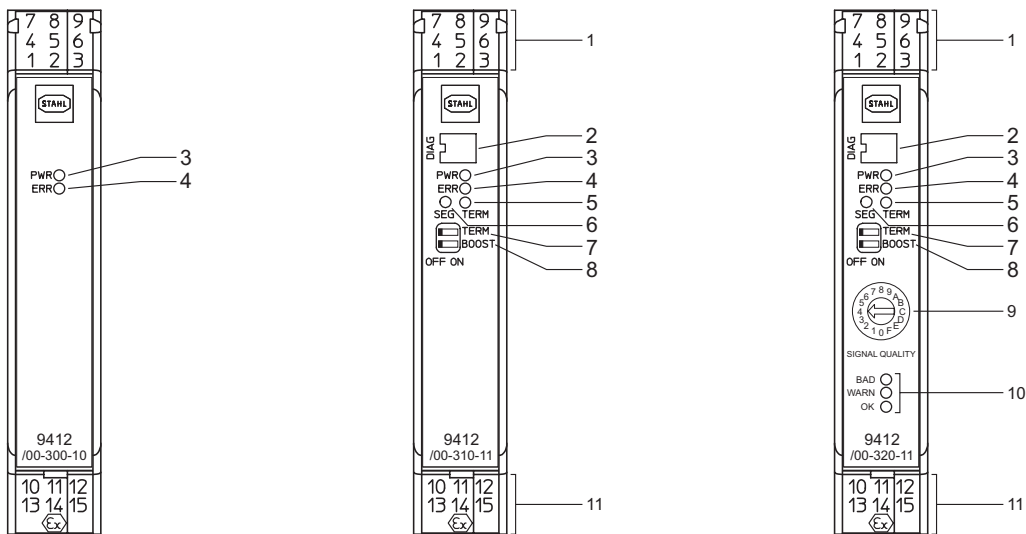
D: Vertical assembly, without distance:



14138E00

7 Main Components


7.1 Main Components of the Fieldbus Power Supply




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No.	Component	9412/0.-			Function
		300	310	320	
1	Terminals	-	x	x	Connection for the power supply and the redundancy circuit (see chapter "Installation").
2	Diagnosis interface	-	x	x	To read out the diagnosis information via a PC
3	LED green "PWR"	x	x	x	Indicates the status of the power supply (see chapter "LEDs on the Fieldbus Power Supply")
4	LED "ERR", red	x	x	x	Indicates the status of the device (see chapter "LEDs on the Fieldbus Power Supply")
5	LED "TERM", yellow	-	x	x	Indicates the status of the internal terminator (see chapter "LEDs on the Fieldbus Power Supply")
6	LED "SEG", yellow	-	x	x	Indicates the status of the device (see chapter "LEDs on the Fieldbus Power Supply")
7	DIP switch "TERM"	-	x	x	Switches the internal terminator on or off (see chapter "DIP Switch on the Fieldbus Power Supply")
8	DIP switch "BOOST"	-	x	x	Switches the parallel mode to double the output power on or off (see chapter "DIP Switch on the Fieldbus Power Supply")
9	"Signal Quality Level" selector switch	-	-	x	Setting the nominal value (Signal Quality Level) of the segment. The indication of the signal quality is done as a function of this setting.
				0	no diagnosis of the signal quality
				1	poor signal quality
				2, 3,...	increasing signal quality
				F	maximum signal quality
10	LEDs "BAD", "WARN" and "OK"	-	-	x	Indication of the signal quality of the segment
				BAD	Signal a lot worse than originally set signal quality level or outside the specification
				WARN	Signal worse than originally set signal quality level
				WARN	no communication detected (flash-es)
				OK	Signal corresponds to selected signal quality level
11	Terminals	-	x	x	Connection for the trunk and the host (see chapter "Installation")

7.2 DIP Switches on the Fieldbus Power Supply

	For an overview of the LEDs on the Fieldbus Power Supply, see chapter "Main Components of the Fieldbus Power Supply".
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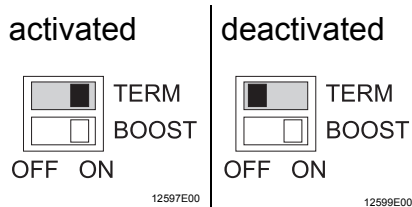
DIP switch "TERM" - Terminator

	The internal terminator is active on delivery
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	In the redundant or boost operation of two Fieldbus Power Supplies, the terminator in both Fieldbus Power Supplies must have the same setting (ON or OFF). If the settings differ, the LEDs "ERR" and "TERM" will flash (see chapter "LEDs on the Fieldbus Power Supply").
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The terminator is used to terminate a segment. Two terminators are required for one segment. One terminator is located at the beginning (e.g. in the Fieldbus Power Supply) and the other is located at the end of a segment (e.g. an integrated terminator in the Field Device Coupler 9411 or an external Fieldbus Terminator 9418).


If the internal terminator is active, the LED "TERM" is lit. If the internal terminator is active in the redundant mode, the LED "TERM" is lit on both devices but only one terminator is active.




DIP switch "BOOST" - Boost mode

	In parallel operation with deactivated Boost mode, the power is supplied redundantly (see chapter "Installation").
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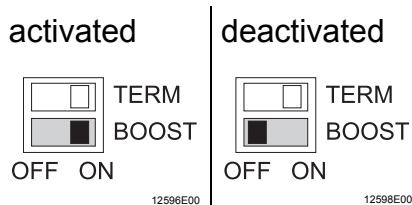
	The Boost mode is inactive on delivery.
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	Due to the considerably higher segment current in the Boost mode (up to 1 A), higher voltage drops occur in the lines or in the components. ► Before activation of the Boost mode, check the segment using the Fieldbus Wizard of R. STAHL (see chapter "Accessories and Spare Parts").
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	In the Boost mode, no redundant power supply and in the redundant mode, no current increase can take place.
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The Boost mode allows parallel operation of two Field Power Supplies for the permanent increase of the possible output current. This function is possible when mounted on a DIN rail and on a bus-Carrier.

The two Fieldbus Power Supplies supply the energy for the segment together. The supply current is distributed in equal parts on both Fieldbus Power Supplies.



- Install the data connection between two Fieldbus Power Supplies (see chapter "Installation").
 - Before activation of the Boost mode, check the segment using the Fieldbus Wizard of R. STAHL (see chapter "Accessories and Spare Parts").
 - Set the DIP switch "BOOST" in both Fieldbus Power Supplies to ON.
- If the Boost setting on the two Fieldbus Power Supplies is different, the red LED "ERR" flashes, and a message is output via the relay contact.

7.3 LEDs and Fault Contacts on the Fieldbus Power Supply

	For an overview of the LEDs on the Fieldbus Power Supply, see chapter "Main Components of the Fieldbus Power Supply".
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Status indication with 9412/0.-300, 9412/0.-310 and 9412/0.-320

LED	Colour	Status	Description/Cause of fault	Troubleshooting	Message Relay contact
LED "PWR"	green	On	External power supply available	- -	
		Off	Power supply failure	Check the power supply	x
			Reverse polarity of the power supply	Establish correct connection of the power supply	x
LED "ERR"	red	On	Internal device fault	Have the device replaced by the manufacturer	x
		flashes (not with 9412/0.-300)	Boost mode is set for single operation	Connect a second Fieldbus Power Supply or deactivate the Boost mode	x
			Setting of the DIP switch "BOOST" or "TERM" are not identical in the Boost or redundant mode	Make sure that the setting of the DIP switch "BOOST" or "TERM" in the Boost or redundant operation is identical on both Fieldbus Power Supplies	x

9412/0.-310 and 9412/0.-320


Status indication via LEDs and relay contact


LED	Colour	Status	Description/Cause of fault	Troubleshooting	Message Relay contact
LED "SEG"	yellow	On	Normal operation of the segment	- -	
		Off	Segment is powered up	Wait until the segment has been powered up	
		flashing	Segment current is outside the specification	Only allowed for a limited time period Check the current consumption of the segment Eliminate the short-circuit Disconnect the field devices, if necessary	x
		flashes quickly	An overload or a short-circuit has occurred, the output is off	Check the segment Disconnect the field devices, if necessary	x
LED "TERM"	yellow	On	Internal terminator is on	To switch off, see chapter "DIP switches on the Fieldbus Power Supply"	
		Off	Internal terminator is off	To switch on, see chapter "DIP switches on the Fieldbus Power Supply"	
		flashing	Setting of the DIP switch "TERM" on both Fieldbus Power Supplies differs in the redundant or boost operation	Make sure that the setting of the DIP switch "TERM" in the redundant or Boost operation is identical on both Fieldbus Power Supplies.	x

9412/0.-320

The signal quality of the segment is indicated via the three diagnosis LEDs "BAD", "WARN" and "OK" (see also chapter "Diagnosis on the Advanced Fieldbus Power Supply 9412-0.-320"). The following statuses are indicated:

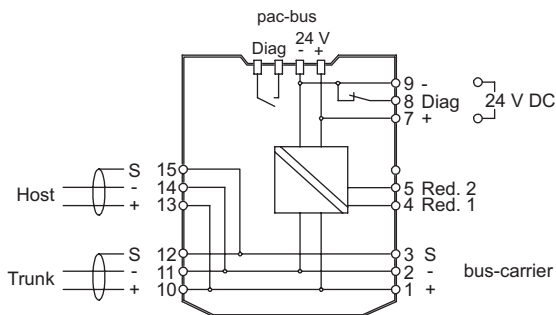
"BAD" LED	"WARN" LED	"OK" LED	Signal quality of the segment	Message via relay contact
○	○	●	corresponds to signal quality nominal value	
○	●	●	drops one level below nominal value	
○	●	○	exceeds nominal value by two levels	
●	●	○	drops three levels below nominal value	x
●	○	○	drops four or more levels below nominal value or is far outside the IEC specification	x

	<p>Alarm messages due to poor quality of the bus signal can have the following reasons:</p> <ul style="list-style-type: none"> • Minimum requirements of the signal level, noise or jitter value are not met • Communication level on the bus too high (e.g. due to missing terminator) • Shielding short-circuit
---	--


	When the "WARN" LED is flashing, the Fieldbus Power Supply will not detect any communication on the fieldbus.
---	---

Function of the relay contacts

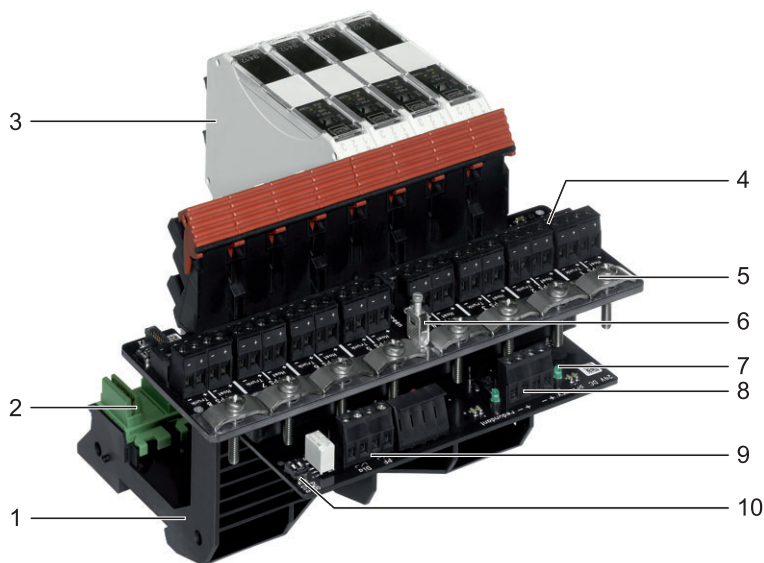
As soon as the message "X" is output, the module contact Diag/9(-) (open in normal operation) will be closed and the pac-Bus collective message contact "Diag" (closed in normal operation) opened.



12573E00

	For the diagnosis options via PC, see chapter "Diagnosis via PC".
---	---


7.4 Main Components of the bus-Carrier



12575E00


No.	Component	Function
1	bus-Carrier	Support for 8 Fieldbus Power Supplies, possibilities to connect the external power supply, the trunks, the hosts and the diagnosis messages
2	pac-Bus	Transmission of the external power supply to the individual Fieldbus Power Supplies
3	Fieldbus Power Supply	Supply of host and trunk with energy
4	Terminals (version equipped with terminals and/or plug connections depending on the type)	Connection for host and trunk
5	Strain relief and shield bus	Support for the shield of the segment supply line
6	Terminals PE shield	Connection to the equipotential bonding
7	LED power supply	Is lit if the power is correctly supplied
8	Terminals for external power supply	Connection of the simple or redundant power supply
9	Terminals for diagnosis and power supply error	Connection for the indication of a power supply failure and diagnosis messages
10	DIP switch "PWR" and "DIA"	Activation or deactivation of the redundant power supply or the error contact (see chapter "DIP Switch on the bus-Carrier")

7.5 DIP Switch on the bus-Carrier




Explosion hazard!

- ▷ Risk of death or severe injuries!
- ▶ It is not allowed to change the DIP switches in Zone 2 while power is active!



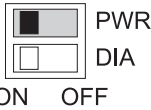
For an overview of the DIP switches on the bus-Carrier, see chapter "Main Components of the bus-Carrier".

DIP switch "PWR" - Redundant power supply



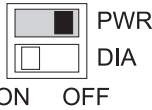
Redundant supply of the I/O modules is only possible with carrier 9419/08R. On delivery the redundant power supply is active.

simple power supply




12595E00

redundant power supply



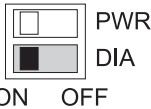
12592E00

DIP switch "DIA" - Error contact



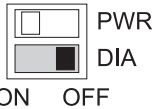
On delivery the error contact is active.

Error messages suppressed



12594E00

Error messages activated



12593E00



7.6 LEDs on the bus-Carrier

Colour	Status	Description/Cause of fault	Troubleshooting
Green	On	Power supply available	- -
	Off	Power supply failure	Check the power supply




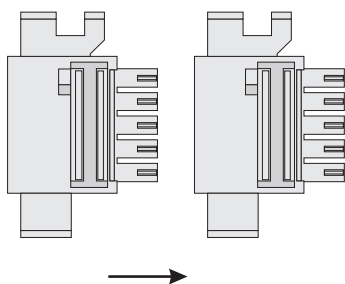
8 Assembly

8.1 Assembly of the Fieldbus Power Supply on DIN rail

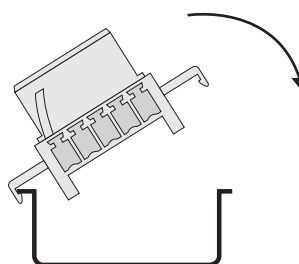
	Installation on the DIN rail is not possible with type 9412/0.-300!
	For simple power supply connection, the Fieldbus Power Supply can be mounted on a DIN rail with pac-Bus The components for the pac-Bus must be ordered separately (see chapter "Spare parts and Accessories").

Assembly of the pac-Bus (optional)

	A maximum of 8 pac-Bus elements can be connected for a 24 V power supply.
---	---

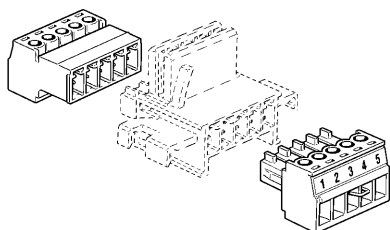


07392E00



07391E00


- Connect the desired number of pac-Bus elements, place them on the DIN rail and pivot them onto it.

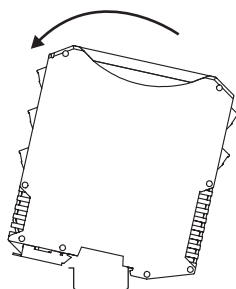


10264E00

- Assemble the terminal set at the beginning and at the end.
- ▷ Assembly of the pac-Bus is complete.

Assembly of the Fieldbus Power Supplies

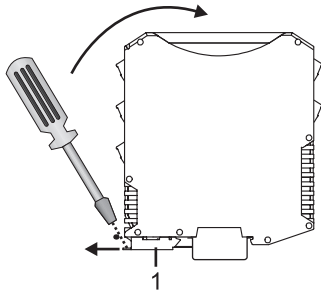
	When pivoting the device onto the DIN rail, make sure that it does not get jammed.
---	--



06885E00

- Insert device onto DIN rail and carefully pivot it onto the rail until the base bolt completely locks into place.

Disassembly of the Fieldbus Power Supplies



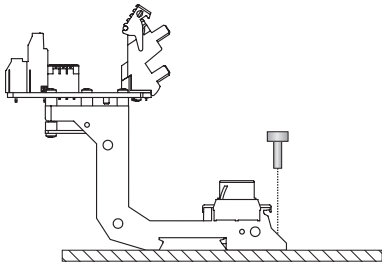
06881E00

- Pull out the base bolt (1) somewhat using a screwdriver.
- Pivot the device off the DIN rail.

8.2 Assembly of the Fieldbus Power Supply on a bus-Carrier

	<p>The bus-Carrier can be installed on a mounting plate or on a DIN rail according to EN 50022 type NS35/7.5 or NS35/15.</p>
--	--

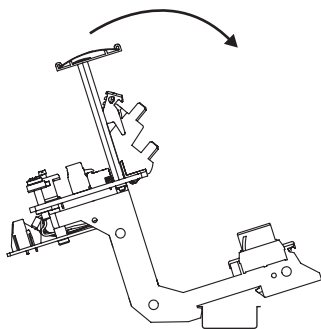
Assembly of the bus-Carrier on a mounting plate



08037E00

- Fasten the device with 2 screws on the mounting plate (installation dimensions are indicated on the dimensional drawing).


Assembly of the bus-Carrier on a DIN rail

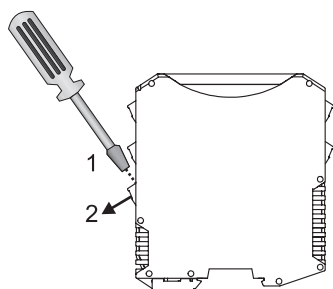


12623E00

- Place the device on the DIN rail and pivot it onto the rail.

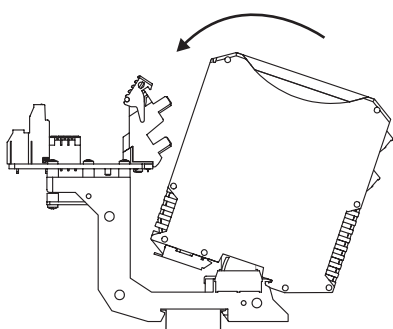
Assembly of the Fieldbus Power Supply on the bus-Carrier

	<p>Before assembly of the Fieldbus Power Supply, all terminals on the base bolt side must be removed.</p>
---	---



06883E00

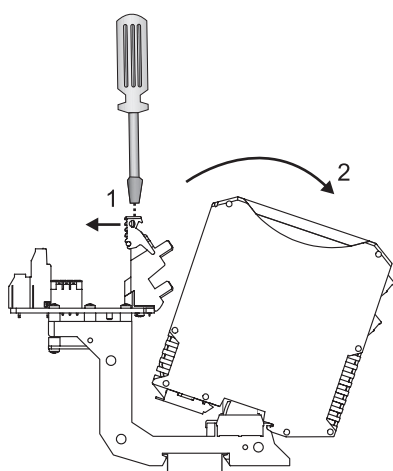
- ▶ Position the screwdriver behind the black and green terminal (1).
- ▶ Push out all terminals (2).



06887E00

- ▶ Position the device correctly on the bus-Carrier and pivot it completely.
- ▶ Make sure that the red detent lever engages with the slot of the Fieldbus Power Supply.
- ▶ Slightly press the red detent lever to close it.
- ▷ If the device is correctly assembled, it engages with an audible click.



Disassembly of the Fieldbus Power Supply from the bus-Carrier




06884E00

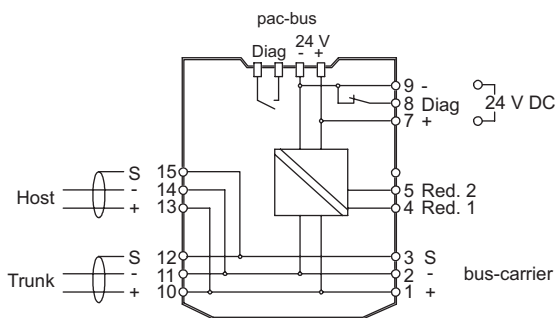
- ▶ Insert the screwdriver in the red detent lever (1) and swivel the detent lever open using the screwdriver.
- ▷ The device is pushed out of the slot (2).
- ▶ Remove the device.

9 Installation

⚠ WARNING	
	Incorrectly installed components!
	<ul style="list-style-type: none"> Explosion protection cannot be guaranteed any more if the components are incorrectly mounted in Zone 2. Carry out the installation in strict accordance with the instructions and national safety and accident prevention regulations (e.g. IEC/EN 60079-14).
⚠ WARNING	
	Explosion hazard!
	<ul style="list-style-type: none"> Risk of death or severe injuries! It is not allowed to work on the power supply in Zone 2 while power is active!

9.1 Assembly of the Fieldbus Power Supply in the Simplex Mode on the DIN rail with and without pac-Bus.

	Installation on the DIN rail is not possible with type 9412/0.-300!
---	---



12573E00

Type 9412/0.-310-11

Power Supply connection without pac-Bus

- Connect the power supply to the green terminals 7 (+) and 9 (-) of the Fieldbus Power Supply.

Power supply connection with pac-Bus

- Connect the power supply to the terminals 1 (+) and 2 (-) of the pac-Bus 9194/50-01 (see chapter "Accessories and Spare Parts").



Connecting the error contact without pac-Bus

- Connect the error contact to the green terminals 8 (+) and 9 (-) of the Fieldbus Power Supply.



Connecting the error contact with pac-Bus

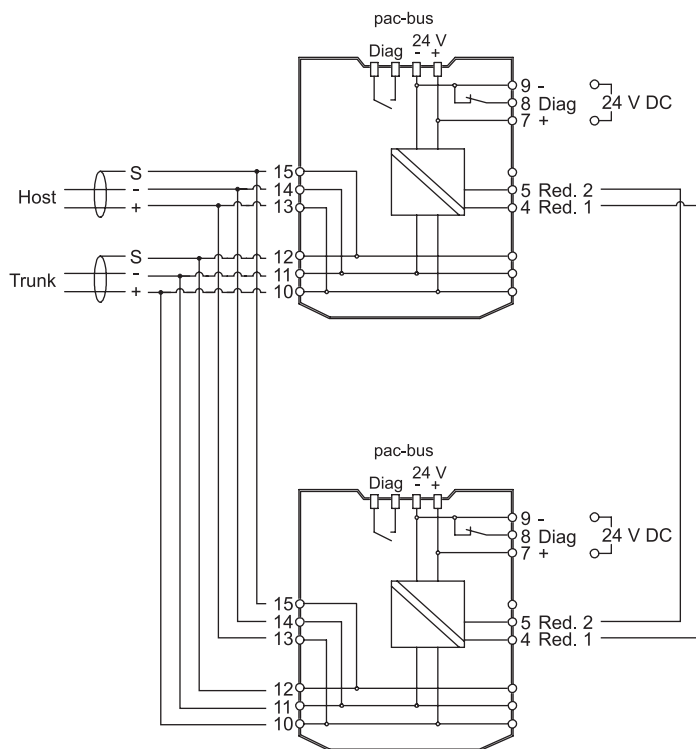
- Connect the error contact to the terminals 3 and 4 of the pac-Bus 9194/50-01 (see chapter "Accessories and Spare Parts").

Connecting the fieldbus

	The shielding line is through-connected from the trunk to the host via the Fieldbus Power Supply.
<ul style="list-style-type: none">▶ Connect the host to the black terminals 14 (-) and 13 (+).▶ Connect the shield of the host cable to the terminal 15 (S).▶ Connect the trunk to the black terminals 11 (-) and 10 (+).▶ Connect the shield of the trunk cable to the terminals 12 (S).▷ The fieldbus connection is complete.	
	The connections Red.1 and Red.2 must not be used in the Simplex mode (see chapter "Installation of Fieldbus Power Supply in redundant operation or Boost operation on a DIN rail with and without pac-Bus").

9.2 Installation of a Fieldbus Power Supply in Redundant Operation or Boost Operation on a DIN rail with or without pac-Bus

	Boost or redundant operation is only possible by means of types 9412/0.-310 or 9412/0.-320.
	The wiring of the trunk and host connections in redundant operation can be carried out via external terminals or by connecting two conductors to a terminal near the Fieldbus Power Supply. For the maximum connection cross-sections, please refer to chapter "Technical Data".



12581E00

Type 9412/0.-310 or 9412/0.-320

Adjustment of the DIP switches

- ▶ Make sure before installation that the settings of the "TERM" and "BOOST" DIP switches on both Fieldbus Power Supplies are identical (see chapter "DIP Switches on the Fieldbus Power Supply").

Connecting the data communication

- ▶ Connect the terminals 4 (Red. 1) and 5 (Red. 2) of the Fieldbus Power Supply 1 to the terminals 4 (Red. 1) and 5 (Red. 2) of the Fieldbus Power Supply 2.
- ▷ The redundant connection has been established.

Power Supply connection without pac-Bus

- ▶ Connect the power supply to the green terminals 7 (+) and 9 (-) of the Fieldbus Power Supplies 1 and 2.

Power supply connection with pac-Bus

- ▶ Connect the power supply to the terminals 1 (+) and 2 (-) of the pac-Bus.

Connecting the error contact without pac-Bus

- ▶ Connect the error contact to the green terminals 8 (+) and 9 (-) of the Fieldbus Power Supplies 1 and 2.

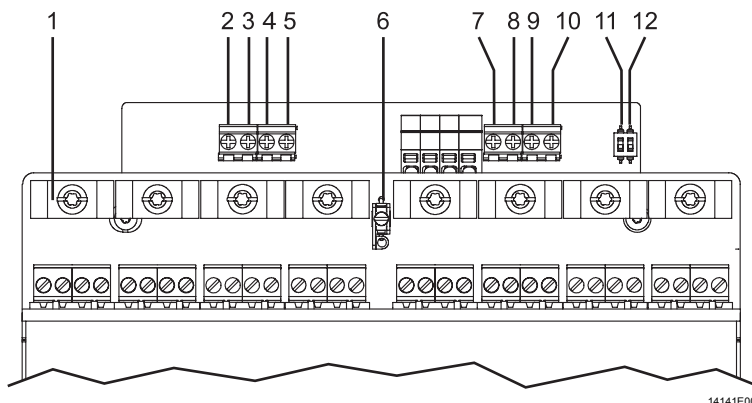
Connecting the error contact with pac-Bus

- ▶ Connect the error contact to the terminals 3 and 4 of the pac-Bus.

Connecting the fieldbus

- ▶ Connect the host to the black terminals 14 (-) and 13 (+) of both Fieldbus Power Supplies.
- ▶ Connect the shield to the terminal 15 (S) on both Fieldbus Power Supplies.
- ▶ Connect the trunk to the black terminals 11 (-) and 10 (+) on both Fieldbus Power Supplies.
- ▶ Connect the shield to the terminal 12 (S) on both Fieldbus Power Supplies.
- ▷ The redundant connection of the fieldbus is complete.

9.3 Installation of the Fieldbus Power Supply on the bus-Carrier - General Connection



Type 9419/08F-XX0-....

Connecting the power supply (not redundant)

- ▶ Connect the power supply to the terminals 2 (+) and 3 (-).
- ▶ Set the DIP switch "PWR" (11) on the bus-Carrier to ON (see chapter "DIP switches on bus-Carrier").
- ▷ The power supply connection is complete.

Connecting the power supply (redundant)

- ▶ Connect the first power supply for a redundancy to the terminals 2 (+) and 3 (-).
- ▶ Connect the second power supply for a redundancy to the terminals 4 (+) and 5 (-).
- ▶ Set the DIP switch "PWR" (11) on the bus-Carrier to OFF (see chapter "DIP switch on bus-Carrier").
- ▷ The power supply connection is complete.


Connecting the error contact

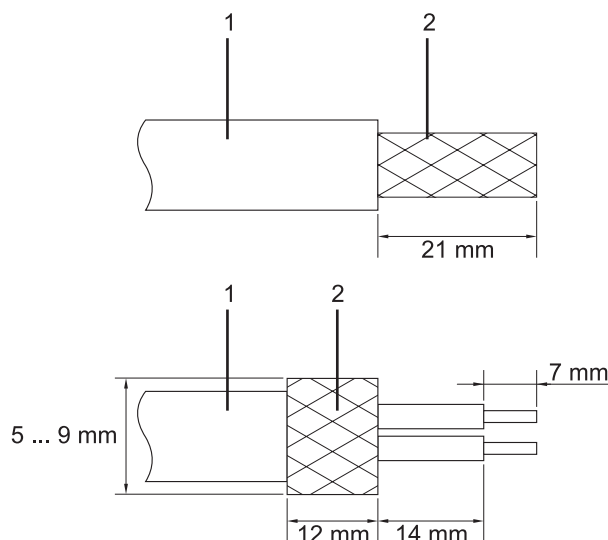
- ▶ Connect the error contact "PF Power supply failure" to the terminals 7 and 8.
- ▶ Connect the error contact "Dia" "Line fault" to the terminals 9 and 10.
- ▶ Set the DIP switch "Dia" (12) on the bus-Carrier to OFF (see chapter "DIP Switch on bus-Carrier").
- ▷ The error contact connection is complete.

Connecting the carrier to the equipotential bonding (option)

- ▶ Connect the terminal (6) of the shield bus to the earthing network.
- ▷ The connection of the shield busbar (1) to the equipotential bonding is complete.

Removing the insulation of the connecting cable

	<p>The traction relief and shielding of the fieldbus connecting cable are established by clamping them under the shield bus (max. tightening torque: 0.7 Nm).</p>
---	---

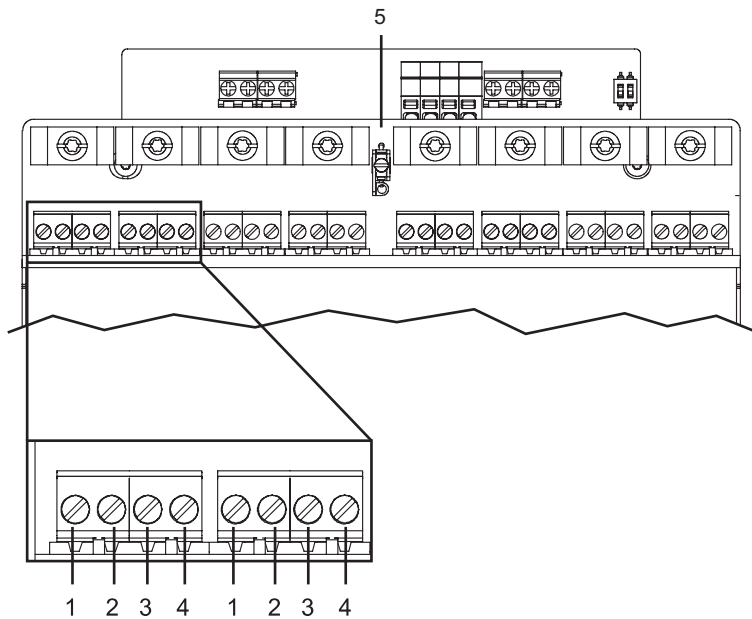


12578E00

- ▶ Remove the insulation of the connecting cable (1) according to the drawing.
- ▶ Turn down the bare shield (2) according to the drawing.
- ▶ Make sure that the cable diameter with the shield turned down does not exceed the dimensions indicated on the drawing.
- ▶ Remove the insulation of the conductors according to the drawing.
- ▶ Make sure that the conductor is not damaged when removing the insulation.
- ▶ This procedure must be repeated for other connecting cables.

9.4 Installation of the Fieldbus Power Supply on the bus-Carrier - Fieldbus Connection for Simplex Operation

In the Simplex operation, each Fieldbus Power Supply supplies one segment with energy. Up to eight segments can be connected to each bus-Carrier.




Type 9419/08F-XX0-....

12577E00

Connecting the fieldbus

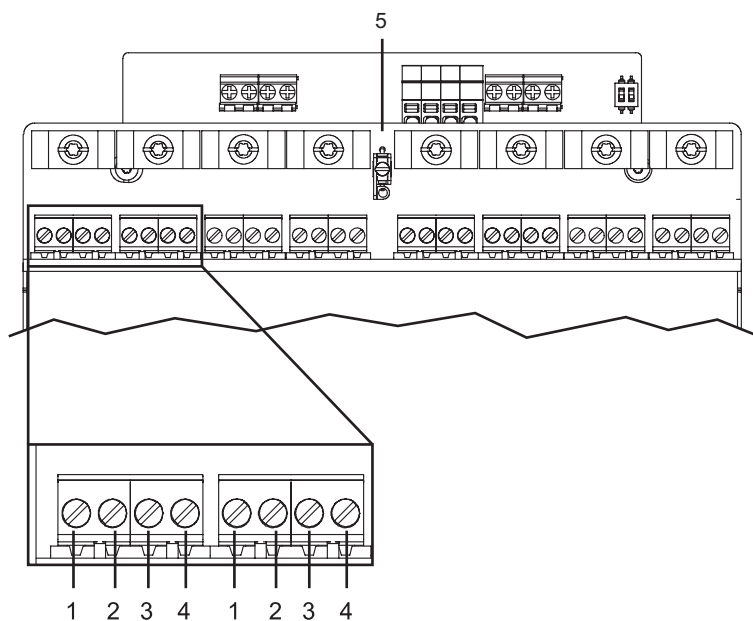
- | | |
|--|---|
| | <p>The traction relief and shielding of the fieldbus connecting cable are established by clamping them under the shield bus (max. tightening torque: 0.7 Nm).</p> |
|--|---|
- ▶ Removing the insulation of the connecting cable (see chapter “Installation of the Fieldbus Power Supply on the bus-Carrier - General Connection”)
 - ▶ Connect the host to the black terminals 1 (+) and 2 (-) for each fieldbus circuit.
 - ▶ Connect the trunk to the terminals 3 (+) and 4 (-) for each fieldbus circuit.
 - ▶ Connect the shields of the connecting cables to the shield bus (5) (max. tightening torque of the terminals: 0.7 Nm).
 - ▷ The redundant connection of the fieldbus is complete.

9.5 Installation of the Fieldbus Power Supply on the bus-Carrier - Fieldbus Connection for Redundant Operation or Boost Operation

	The redundant and Boost operation of the Fieldbus Power Supplies on the bus-Carriers is only possible if bus-Carriers of type 9419/08R are used.
---	--

In the redundant operation, two neighbouring Fieldbus Power Supplies ensure the redundant supply of a segment. In the Boost operation, two neighbouring Fieldbus Power Supplies ensure the supply of a segment with the double current. It is therefore possible to connect four segments in each operating mode. They are internally connected in the bus-Carrier. An additional external wiring is not necessary.


The connecting cables must only be connected on a terminal block for each segment or for every two Fieldbus Power Supplies. Optionally, the host can be connected redundantly by connecting it to the terminals of both terminal blocks.



Type 9419/08R-XX0-..C1

14142E00

Connecting the fieldbus

	The traction relief and shielding of the fieldbus connecting cable are established by clamping them under the shield bus (max. tightening torque: 0.7 Nm).
---	--

- ▶ Removing the insulation of the connecting cable (see chapter "Installation of the Fieldbus Power Supply on the bus-Carrier - General Connection")
- ▶ Connect the host to the terminals 1 (+) and 2 (-) of one of the assigned terminal blocks.
- ▶ For redundant connection, connect the host also to the terminals 1 (+) and 2 (-) of the other terminal block.
- ▶ Connect the trunk to the terminals 3 (+) and 4 (-) of one of the assigned terminal blocks.
- ▶ Connect the shields of the connecting cables to the shield bus (5) (max. tightening torque of the terminals: 0.7 Nm).
- ▷ The fieldbus connection is complete.

10 Commissioning

Before commissioning, make sure that

- ✗ the device has been installed according to regulations in the correct slot,
- ✗ the device is not damaged,
- ✗ the cables have been connected properly.

11 Diagnosis

11.1 Definitions of Terms



See also IEC 61158-2 or NAMUR NE 123.

Minimum signal level

The minimum voltage level is 450 mV. Low signal levels may occur when the attenuation of the cable is too high or the segment was over-terminated.

Maximum signal level

The maximum signal level is 1250 mV. High signal levels may occur when the segment was under-terminated.

Noise / interference levels

Noise is caused by the superposition of undesired voltage levels > 50 mV on the useful signal. It is caused by the coupling of electromagnetic fields to the fieldbus, for example due to switching operations, frequency converters, etc.

Critical is the so-called inband noise. Low- or high-frequency noise has no significant effect on the signal quality.

Jitter

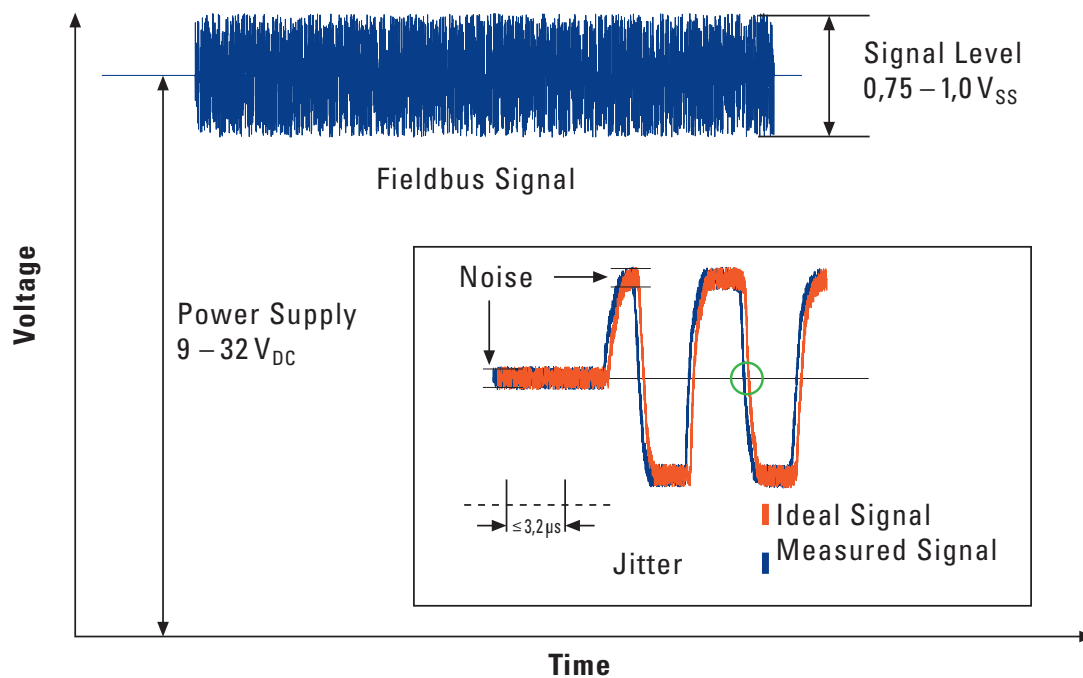
Jitter is the displacement with time of a digital signal from the transmission cycle. Jitter is caused by cable attenuation (e.g. resulting from increased line or contact resistances) or over-/undertermination.

Jitter is one of the most important parameters for establishing the quality of a fieldbus communication.

Symmetry

Here symmetry denotes the voltage-symmetrical power supply, relative to the reference potential (earth). Deviations give an indication of the quality of the shielding. In industrial use, values of up to 20 % can be expected, in which the line length plays an important role.

Values of approx. +/- 100% indicate a short circuit between the line (+ or -) and the shield.





14139T02

11.2 Diagnosis via PC

	<p>For detailed diagnosis, the Fieldbus Power Supplies 9412/0.-310 and 9412/0.-320 can be connected to a PC using the connecting cable of the parameterisation set 9199/20-02.</p> <p>Communication between the Fieldbus Power Supply and the PC is established via the "HyperTerminal" software component.</p> <p>This component is part of the standard installation of the Microsoft Windows XP operating systems (or its predecessors). For newer versions of the Microsoft Windows operating system, it must be installed additionally.</p>
--	--

HyperTerminal setup

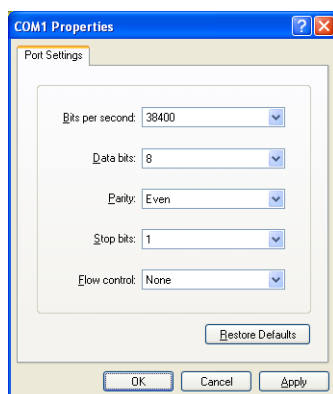
	The configuration file "9412-Advanced Diagnose.ht" can be downloaded from http://www.stahl.de/produkte-und-systeme/feldbustechnik.html . After clicking this file, the HyperTerminal will be automatically configured and opened. Alternatively, the HyperTerminal connection can also be set manually.
	As standard, the connection between the Fieldbus Power Supply and the PC is established via the "COM1" port.

Standard:

- ▶ Click on the configuration file "9412-Advanced Diagnose.ht".
- ▷ The HyperTerminal is configured.
- ▷ HyperTerminal is opened.

Alternatively:

- ▶ Open the HyperTerminal.
- ▶ Set up the HyperTerminal connection manually via "File > Properties".
- ▶ Make sure that the connection settings of the port used are as follows:




14140T02

- ▷ The setup of the HyperTerminal connection is complete.


Reading out the diagnosis data

- ▶ Connect the PC and the diagnosis interface of the Fieldbus Power Supply using the connecting cable of the parameterisation set 9199/20-02.
- ▶ Establish connection to the HyperTerminal
- ▷ The diagnosis data is displayed.


11.3 Diagnoses at the Advanced Fieldbus Power Supply Series 9412/0.-320

	<p>The signal quality of the connected segment is indicated as a function of the set value via the "BAD", "WARN" and "OK" LEDs.</p> <p>To this end, first the signal quality of the segment is established, and the desired value is set. If the signal quality drops below the set value, this is indicated by the LEDs.</p>
---	---


Determining the signal quality of the connected segment

	<p>The communication signal of the connected fieldbus devices is permanently monitored as soon as they are supplied with power from the Fieldbus Power Supply and the set quality level is > 0.</p>
---	--


- Using a screwdriver, set the "Signal Quality Level" selector switch to "1".
- ▷ The "OK" LED is lit.

	<p>When the "WARN" LED is flashing, no communication will take place on the segment.</p> <p>If the "WARN" LED and/or "ERR" LED is lit, the quality of the bus signal is already extremely poor. Normal bus operation is not recommended under these circumstances.</p>
---	--

- Rotate selector switch clockwise until only the "OK" LED is lit.
- ▷ The signal quality of the connected segment corresponds to the quality level selected at the selector switch.


	<p>To obtain an IEC-compliant warning message ("ERR" LED and message via relay contact when the level drops below the minimum IEC values from IEC 61158-2), the adjustable quality level must be at least 4.</p> <p>If the established quality level is < 4, we recommend checking the segment via the diagnosis interface (see chapter "Diagnosis via PC") or using a fieldbus test device.</p>
---	---

"BAD" LED	"WARN" LED	"OK" LED	Signal quality of the segment	Message via relay contact
○	○	●	corresponds to signal quality nominal value	
○	●	●	drops one level below nominal value	
○	●	○	exceeds nominal value by two levels	
●	●	○	drops three levels below nominal value	x
●	○	○	drops four or more levels below nominal value or is far outside the IEC specification	x

	<p>Should the bus quality deteriorate with time (e.g. by adding further field devices), this is reported by the yellow "WARN" LED or the red "ERR" LED. By changing the "Quality Level" setting at the selector switch, the new value can be set as new nominal value, as a result of which the green "OK" LED is lit again. The quality level should still be at least 4.</p>
---	--

Achieved measured values:

Quality level	Min. signal level	Noise Level	Jitter	Signal quality
0				
1	$\geq 220 \text{ mV}$	$\leq 85 \text{ mV}$	$\leq 3.5 \mu\text{s}$	poor
2	$\geq 230 \text{ mV}$	$\leq 75 \text{ mV}$	$\leq 3.2 \mu\text{s}$	IEC minimum requirement
3	$\geq 260 \text{ mV}$	$\leq 65 \text{ mV}$	$\leq 2.9 \mu\text{s}$	good
4	$\geq 290 \text{ mV}$	$\leq 55 \text{ mV}$	$\leq 2.7 \mu\text{s}$	good
5	$\geq 330 \text{ mV}$	$\leq 50 \text{ mV}$	$\leq 2.5 \mu\text{s}$	good
6	$\geq 370 \text{ mV}$	$\leq 45 \text{ mV}$	$\leq 2.3 \mu\text{s}$	good
7	$\geq 410 \text{ mV}$	$\leq 40 \text{ mV}$	$\leq 2.1 \mu\text{s}$	good
8	$\geq 450 \text{ mV}$	$\leq 35 \text{ mV}$	$\leq 1.9 \mu\text{s}$	excellent
9	$\geq 500 \text{ mV}$	$\leq 30 \text{ mV}$	$\leq 1.7 \mu\text{s}$	excellent
10 (A)	$\geq 550 \text{ mV}$	$\leq 25 \text{ mV}$	$\leq 1.5 \mu\text{s}$	excellent
11 (B)	$\geq 600 \text{ mV}$	$\leq 20 \text{ mV}$	$\leq 1.3 \mu\text{s}$	excellent
12 (C)	$\geq 650 \text{ mV}$	$\leq 16 \text{ mV}$	$\leq 1.1 \mu\text{s}$	excellent
13 (D)	$\geq 700 \text{ mV}$	$\leq 13 \text{ mV}$	$\leq 0.9 \mu\text{s}$	excellent
14 (E)	$\geq 750 \text{ mV}$	$\leq 10 \text{ mV}$	$\leq 0.7 \mu\text{s}$	excellent
15 (F)	$\geq 800 \text{ mV}$	$\leq 7 \text{ mV}$	$\leq 0.5 \mu\text{s}$	excellent

	Although permanent operation of the segment at the quality level "1" (poor) is possible, it is not recommended, since any deterioration of bus quality can result in the failure of the segment!
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12 Maintenance

- ▶ Consult the relevant national regulations (e.g. IEC/EN 60079-17) to determine the type and extent of inspections.
- ▶ Plan the intervals such that any expected defects in the equipment are detected promptly.

The following inspections have to be carried out during maintenance work:

- ✗ Check if the cables are clamped properly.
- ✗ Check the device for signs of visible damage.
- ✗ Compliance with the permitted temperatures in accordance with IEC/EN 60079-0.
- ✗ Make sure that the device is used according to its designated use.

13 Repair work

 WARNUNG	
	Danger due to improper maintenance/repairs <ul style="list-style-type: none"> ▷ Explosion protection is not guaranteed any longer. ▶ Repair work to the device must only be performed by R. STAHL.

- ▶ Repair work is only to be performed by the manufacturer.
- ▶ No changes to the equipment are permitted.
- ▶ The equipment must be returned to the manufacturer for repair.

14 Transport, Storage and Disposal

Transport

- Shock-free in its original carton, do not drop, handle carefully.

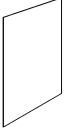





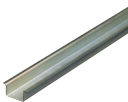

Storage


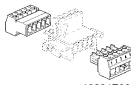

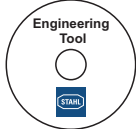

- Store in a dry place in its original packaging
- Permitted temperature range for storage in original packaging: - 40 °C ... + 80 °C

Disposal

- Ensure environmentally friendly disposal of all components according to the legal regulations.

15 Accessories and Spare Parts

Designation	Illustration	Description	Order number	Weight kg
Labelling sheet DIN A4	 09900E00	180 labels	160640	0.001
Screw terminals	 07099E00	green	112817	0.001
	 07093E00	black	112816	0.001
Screw terminals with test plug socket	 07108E00	black	113005	0.001
Spring-cage terminals	 07094E00	Green	112825	0.005
	 07100E00	black	112824	0.005
DIN rail (EN 50022)	 07104E00	NS 35 / 15 (meter length)	103714	1.410
		NS 35 / 7.5 (meter length)	103707	0.349
Dummy module	 07091E00	for connection of unused cables	9191/20-00-00	0.060

Designation	Illustration	Description	Order number	Weight kg
End fixture	 10271E00	e. g. Phoenix, E/ME, TBUS NS 35 GY, CLIPFIX 35 or similar		
Terminal set for pac-Bus	 10264E00	5-pole, (set beginning + end) with bridge for fault message chain	9194/50-01	0.008
pac-Bus	 09885E00	Wiring of power supply and collective error message for device group ISpac	9194/31-17	0.004
Fieldbus Wizard Engineering Tool	 07376E00	Engineering tool for segment design of Fieldbus Foundation or Profibus PA Fieldbus segments	Download available at www.fieldbus-solutions.info	
Terminator	 06501E00	Fieldbus Terminator "Ex m"	9418/01-201-10	0.080
		Fieldbus Terminator "Ex i"	9418/02-201-10	0.080
Parameterisation cable		to read out the diagnosis data from the Fieldbus Power Supply 9412 to a PC	9418/20-02	0.080

16 EC Declaration of Conformity

EG-Konformitätserklärung EC Declaration of Conformity Déclaration de Conformité CE



R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany
erklärt in alleiniger Verantwortung, declares in its sole responsibility, déclare sous sa seule responsabilité,

dass das Produkt: **Feldbus Stromversorgung**
that the product: **Feldbus Power Supply**
que le produit: **Alimentation Bus de Terrain**

Typ(en), type(s), type(s): **9412/0b-3d0-1g (b = 0, 1, 2 ; d = 0, 1, 2 ; g = 0, 1)**

mit den Anforderungen der folgenden Richtlinien und Normen übereinstimmt.
is in conformity with the requirements of the following directives and standards.
est conforme aux exigences des directives et des normes suivantes.

Richtlinie(n) Directive(s) Directive(s)	Norm(en) Standard(s) Norme(s)
94/9/EG: ATEX-Richtlinie 94/9/EC: ATEX Directive 94/9/CE: Directive ATEX	EN 60079-0: 2012 EN 60079-11: 2012 EN 60079-15: 2010
Kennzeichnung, marking, marquage:	II 3 G Ex nA nC IIC T4 Gc CE
Baumusterprüfbescheinigung: Type Examination Certificate: Attestation d'examen de type:	BVS 09 ATEX E 099 X (DEKRA EXAM GmbH, Dinnendahlstraße 9, 44809 Bochum)
2004/108/EG: EMV-Richtlinie 2004/108/EC: EMC Directive 2004/108/CE: Directive CEM	EN 61326-1: 2013
Sonstige Normen: Other Standards: Autres normes:	EN 50178: 1997 EN 61010-1: 2010

Waldenburg, 02.08.2013

Ort und Datum
Place and date
Lieu et date

i.V.

C. Brenner
Leiter Entwicklung Automatisierung
Director R&D Automation
Directeur R&D Automation

i.V.

J.-P. Rückgauer
Leiter Qualitätsmanagement
Director Quality Management
Directeur Assurance de Qualité

F-4174-601 01/2011 STMZ

9412 6 002 001 0_02



EG-Konformitätserklärung
EC-Declaration of Conformity
Déclaration de Conformité CE



R. STAHL Schaltgeräte GmbH • Am Bahnhof 30 • 74638 Waldenburg, Germany

erklärt in alleiniger Verantwortung, declares in its sole responsibility, déclare sous sa seule responsabilité,

dass das Produkt
that the product
que le produit

bus-Träger
bus-Carrier
bus-Socle

Typ, type, type:

9419/0bc-****f-gh**** (b = 4, 8; c = F, R; f = 1 – 9; gh = 01, 02)

Kennzeichnung, marking, marquage:

II 3 G Ex nA nC IIC T4 Gc

CE

mit der EG-Baumusterprüfbescheinigung:
under EC-Type Examination Certificate:
avec Attestation d'examen CE de type:

BVS 09 ATEX E 100 X
 (DEKRA EXAM GmbH,
 Dinnendahlstraße 9, 44809 Bochum)

auf das sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmt
which is the subject of this declaration, is in conformity with the following standards or normative documents
auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants

Bestimmungen der Richtlinie <i>Terms of the directive</i> <i>Prescription de la directive</i>	Nummer sowie Ausgabedatum der Norm <i>Number and date of issue of the standard</i> <i>Numéro ainsi que date d'émission de la norme</i>
1994/9/EG: ATEX-Richtlinie 1994/9/EC: ATEX Directive 1994/9/CE: Directive ATEX	EN 60079-0: 2009 EN 60079-15: 2010
2004/108/EG: EMV-Richtlinie 2004/108/EC: EMC Directive 2004/108/CE: Directive EMC	EN 61326-1: 2006
Allgemeine Normen ohne Bezug auf eine Richtlinie <i>General standards without reference to a directive</i> <i>Normes générales sans référence à une directive</i>	EN 50178: 1997 EN 61010-1: 2001 + Corrigendum / Errata

Waldenburg, 14.11.2011

Ort und Datum
Place and date
Lieu et date

i.v.
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Directeur Développement et Technique

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Dr. S. Jung
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F-4174-601 01/2011 STMZ

9419 6 002 001 0_01



